



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/023,075	12/13/2001	Oleg Yurievich Gusikhin	199-0072 (FGT 1398 PUS)	5535

7590

09/20/2005

John S. Artz  
Artz & Artz, P.C.  
Suite 250  
28333 Telegraph Road  
Southfield, MI 48034

EXAMINER

CHOW, CHIH CHING

ART UNIT

PAPER NUMBER

2192

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/023,075

Applicant(s)

GUSIKHIN ET AL.

Examiner

Chih-Ching Chow

Art Unit

2192

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-16 and 20-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 and 20-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

1. This action is responsive to the Petition to withdraw "final" status of previously mailed final rejection filed on June 16, 2005.
2. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.
3. The content of the last Office action is reproduced hereinafter for Applicant's convenience.
4. In response to amendment filed January 14, 2005, the Specification, Claims 1, 9, and 23 have been amended; Claims 17-19 are canceled. Claims 1-16, 20-24 remain pending.

### ***Response to Amendment***

5. Applicants' amendment dated 01/14/2005, responding to the 10/14/2004 Office action provided in the objection of Specification. The examiner has reviewed the updated specification respectfully.
6. The objection to the specification is hereby withdrawn in view of Applicants' amendment to the specification.
7. Applicants' amendment dated 01/14/2005, responding to the 10/14/2004 Office action provided 35 USC § 112 rejection for claims 16-19. The examiner has reviewed the updated Specification respectfully regarding to the clarification for Claim 16.
8. The 35 USC § 112 rejection for Claim 16 is hereby withdrawn in view of Applicants' amendment to the Specification, paragraph [0015]. No discussion for Claims 17-19 is necessary, since they are canceled upon the Applicants' request.
9. Applicants' amendment for Claims 1, 9, and 23 dated 01/14/2005, responding to the 10/14/2004 Office Action provided in the rejection of claims 1, 9, and 23. The examiner has reviewed the amended claims; however new art i.e., "Van Huben" is recited. See rejection to the amended claims herein below.

***Claim Rejections - 35 USC § 112***

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 5-6 recite the limitation "said plurality first image files" in Claim 1. The amended Claim 1 no longer recites "said plurality first image files". There is insufficient antecedent basis for this limitation in the claim.

12. Claims 13-16, and 20 recite the limitation "said plurality first image files" in Claim 9. The amended Claim 9 no longer recites "said plurality first image files". There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. Claims 1-4, 9-12, 15-16, 20, and 23-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Van Huben et al. (hereinafter "Van Huben").

**CLAIM**

1. A virtual reality modeling language (VRML) interface device comprising:  
(a) a World Wide Web browser wherein said browser includes a VRML viewer plug-in;

(b) at least one external database comprising a reference designator, an X and Y location, rotation information, and package type for each of a plurality of components wherein said reference designator, said X and Y location, said rotation information, and said package type are created on differing software platforms; and

(c) a VRML interface software program installed said browser wherein said program compiles visual information from said reference designator, said X and Y location, said rotation information, and said package type and said VRML viewer plug-in and creates second image file based on said reference designator, said X and Y location, said rotation information, and said package type wherein said second image file can be viewed independent computer platform.

2. The device as recited claim 1 further comprising a database interface

**Van Huben**

Van Huben teaches a VRML interface device comprising WWW browser includes a VRML viewer plug-in, see Van Huben's column 9, lines 43-49, "Each client and server in our preferred embodiment, is able to implement cross platform code via interpretation, and thus can implement programs written in cross platform languages like **Java** and **VRML**. In such situations, **Java can interact with VRML by describing extension modes, acting as scripts, and describing the actions and interactions of VRML objects**". For item (a) see Van Huben column 27, line 50 into column 28, "WWW/Internet Access". For items (b) and (c), see Van Huben's abstract, "A design control system suitable for use in connection with the **design of integrated circuits (PCB)** and other elements of manufacture **having many parts** (*second image information/file*) which need to be developed in a concurrent engineering environment with **inputs provided by users** and or systems which may be located anywhere in the world provides a set of control information for **coordinating movement of the design information** (*reference designator, X and Y coordinates, and rotation information are specified for circuit design board, see last line of Remarks page 13 to first paragraph of page 14*) through development and to release while providing dynamic tracking of the status of elements of the bills of materials in an integrated and coordinated activity control system utilizing a repository which can be implemented in the form of a database (relational, object oriented, etc.) or using a flat file system."

For the feature of claim 1 see claim 1 rejection. For 'external database' feature

communicate between said browser and said least one external database.

3. The device as recited claim 2 wherein said database interface is common gateway interface (CGI).

4. The device as recited claim 2 wherein said database interface Java Applets routine.

9. A virtual reality modeling language (VRML) interface system for printed circuit board (PCB) manufacturing comprising:

(a) a World Wide Web browser wherein said browser includes a VRML viewer plug-in;

(b) at least one external database storing a reference designator, an X and Y location, rotation information, and package type for each of a plurality of components wherein said reference designator, said X and Y location, said rotation information, and said package type for each of said plurality of components are created on differing software platforms;

(c) a VRML interface software program installed onto said browser wherein said program compiles visual information from said reference designator, said X and Y location, said rotation information, and said

see Van Huben's FIG. 1, at least one external database communicated within the network.

For the feature of claim 2 see claim 2 rejection. For the CGI feature, see Van Huben's column 18, lines 7-9, "the DCS permits an authorized user to send commands through the Internet Common Gateway Interface (CGI) to query information from the DCS or invoke Designer Initiated Library Processes (DILPs)"

For the feature of claim 2 see claim 2 rejection. As mentioned in rejection 1, **Java can interact with VRML by describing extension modes, acting as scripts, and describing the actions and interactions of VRML objects**, it's also a well known skill for people in the art to use **Java applet** because it is to be executed in a Java-compatible web browser.

Van Huben's disclosure is for circuit design use, see claim 1 rejection.

package type for each of said plurality of components and creates a second image file based on said reference designator, said X and Y location, said rotation information, and said package type for each of said plurality of components wherein said second image file can be viewed independent of computer platform; and

(d) a printed circuit board (PCB) assembly facility wherein assembly operators assemble PCBs from said second image file.

10. The system as recited claim 9 further comprising a database interface to communicate between said browser said at least one external database.

For the feature of claim 9 see claim 9 rejection. For the rest of claim 10 feature see claim 2 rejection.

11. The system as recited claim 10 wherein said database interface is a common gateway interface (CGI).

For the feature of claim 10 see claim 10 rejection. For the rest of claim 11 feature see claim 3 rejection.

12. The system as recited in claim 10 wherein said database interface is a Java Applets routine.

For the feature of claim 10 see claim 10 rejection. For the rest of claim 12 feature see claim 4 rejection.

15. The system as recited in claim 9 wherein said plurality of first image files is partially comprised of a VRML database.

For the feature of claim 9 see claim 9 rejection. For the rest of the feature see claim 1 rejection.

16. The system as recited in claim 15 wherein said VRML database is partially comprised of fiducials.

For the feature of claim 15 see claim 15 rejection. As specified in the Specification paragraph 0015, 'Fiducials' are coordinate location information points, Van Huben's disclosure has covered 'fiducials' since Van Huben's disclosure is for circuit design, which needs to specifically identify circuit positions and components.

20. The system as recited in claim 15 wherein said VRML database is partially comprised of package type information for

For the feature of claim 15 see claim 15 rejection. For the rest of claim 20 feature see claim 1 rejection.

Art Unit: 2192

components to be assembled on said PCB.

23. A method to generate a second VRML image file based on a reference designator, an X and Y location, rotation information, and package type for each of a plurality of components created from differing software platforms comprising the steps of:

(a) assembling at least one external database that contains said reference designator, said X and Y location, said rotation information, and said package type for each of said plurality of components created from differing software platforms;

(b) loading a VRML interface software program onto a World Wide Web (WWW) browser wherein said program compiles visual information from said reference designator, said X and Y location, said rotation information, and said package type for each of said plurality of components and creates a second VRML image file based on said reference designator, said X and Y location, said rotation information, and said package type for each of said plurality of components and creates a second VRML image file based on said reference designator, said X and Y location, said rotation information, and said package type for each of said plurality of components wherein said VRML image file can be viewed independent of computer platform;

(c) accessing WWW server by using said WWW browser and using a database interface to access said reference designator, said X and Y location, said rotation information, and said package type for each of said plurality of components; and

For items (a)-(c) see claim 1 rejection, for item (d), see Van Huben's column 27, lines 51-57, under the **WWW/Internet Access** (Section 1.18), "The DCS provides a mechanism which permits **access** to all process and psuedo process results through the **World Wide Web**. Key quality control indicators can be **exported out** (*can download required software*) of the DCS into an accessible format by users on the WWW. Usually these results would exist in a secure repository which could only be **accessed** by **WWW** users who are working on the project."



(d) downloading said reference designator, said X and Y location, said rotation information, and said package type for each of said plurality of components and using said VRML interface software program to generate said second image file.

24. The method as recited in claim 23 further comprising step of viewing said second image file by utilizing said WWW browser wherein a VRML viewer plug-in is loaded onto said browser.

For the feature of claim 23 see claim 23 rejection. For the rest of claim 24 feature see claim 1 rejection.

### ***Claim Rejections - 35 USC § 103***

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 7-8, 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gary Alan Van Huben et al. (hereinafter "Van Huben"); in view of US 2002/0041287 by Peter G. Engeldrum et al. (hereinafter "Engeldrum").

#### **CLAIM**

7. The device as recited claim 1 wherein said second image files are composed JPEG format that can be viewed independent of computer platform.

#### **Van Huben / Engeldrum**

For the feature of claim 1 see claim 1 rejection. Van Huben teaches the technology that enables development using VRML for web based environment but does not teach the 'JPEG' specifically. However Engeldrum teaches 'JPEG' in an analogous art. In Engeldrum, paragraph 42, "image 52 as then displayed on display 22 may be a more accurate color

Art Unit: 2192

representation of a reference or author image, image 56 than may otherwise be achieved. Image 56 may be corrected from any conventional format including but not limited to rendering formats such as PCL and PDF, image formats such as **JPEG** 2000, AVI, MPEG 2, MPEG3, MPEG4, Quick time, Real Media, VRML, ART, WMF, FPX, BMP, PCX, TIFF, **GIF**, flash, or postscript." Further more, an example is given in Powers, "Uses the given **image file (GIF or JPEG)** as the tiled texture for the sky above the world." It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to supplement Van Huben's disclosure of the VRML technology by the JPEG and GIF format taught by Engeldrum, for the purpose of displaying and correcting the JPEG and GIF image format files (see Engeldrum, paragraph 42).

8. The device as recited claim 1 wherein said second image files are composed in a GIF format that can be viewed independent computer platform.

Same as claim 7 rejection.

21. The system as recited in claim 9 wherein said second image files are composed in a JPEG format that can be viewed independent of computer platform.

For the feature of claim 9 see claim 9 rejection. For the rest of claim 21 feature see claim 7 rejection.

22. The system as recited in claim 9 wherein said second image files are composed in a GIF format that can viewed independent of computer platform.

For the feature of claim 9 see claim 9 rejection. For the rest of claim 22 feature see claim 8 rejection.

17. Claims 5-6, and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gary Alan Van Huben et al. (hereinafter "Van Huben"); in view of U.S. Patent no. 6, 665,854 by Fujiwara et al. (hereinafter "Fujiwara").

**CLAIM**

5. The device as recited claim 1 wherein said plurality first image files are composed in a Gerber format.

**Van Huben / Fujiwara**

For the feature of claim 1 see claim 1 rejection. Gerber format is a design choice for a CAD tool. In Van Huben's disclosure, it does not limit to a certain tool, any CAD produced image model would apply. Van Huben teaches the technology that enables development using VRML for web based environment but does not teach the 'Gerber format' specifically. However Fujiwara teaches 'Gerber format' in an analogous art. In Fujiwara, column 10, lines 40-45, "The **CAD** data also includes information about detailed shape of the **circuit board**, such as actual shape or perforations, as variable-length data. This variable-length data can be represented by using any shape representation format, generally in a **Gerber format**."

It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to supplement Van Huben's disclosure of the VRML technology for a circuit design work by 'Gerber format' taught by Fujiwara, for the purpose of representing a shape of a circuit board (see Fujiwara, column 10, lines 44-45).

6. The device as recited claim 1 wherein said plurality image files are composed in a CAD format.

Same as claim 5 rejection.

13. The system as recited in claim 9 wherein said plurality of first image files is partially comprised of Gerber images of PCB artwork.

For the feature of claim 9 see claim 9 rejection. For the rest of claim 13 feature see claim 5 rejection.

14. The system as recited in claim 9 wherein said plurality of first image files is partially comprised of CAD images of electronic components used in assembling said PCB.

For the feature of claim 9 see claim 9 rejection. For the rest of claim 14 feature see claim 6 rejection.

**Conclusion**

18. The following summarizes the status of the claims:

35 USC § 112 (2<sup>nd</sup> paragraph) rejection: Claims 5-6, 13-16, and 20

35 USC § 102 rejection: Claims 1-4, 9-12, 15-16, 20, and 23-24

35 USC § 103 rejection: Claims 5-8, 13-14, and 21-22

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Ching Chow whose telephone number is 571-272-3693. The examiner can normally be reached on 7:30am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam can be reached on 571-272-3695. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Any inquiry of a general nature of relating to the status of this application should be directed to the **TC2100 Group receptionist: 571-272-2100**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chih-Ching Chow  
Examiner  
Art Unit 2192  
September 9, 2005



ANTONY NGUYEN-BA  
PRIMARY EXAMINER